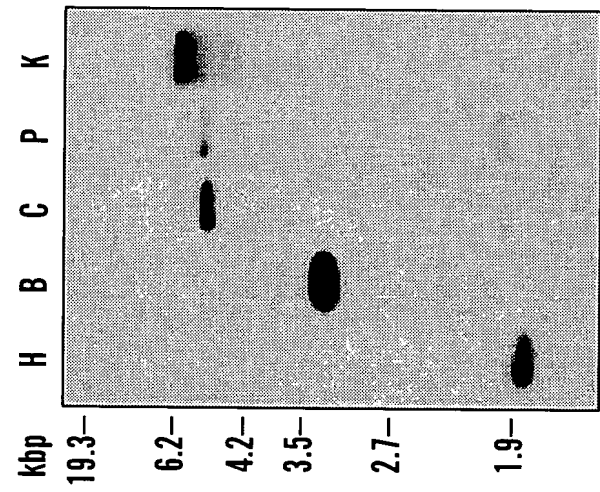
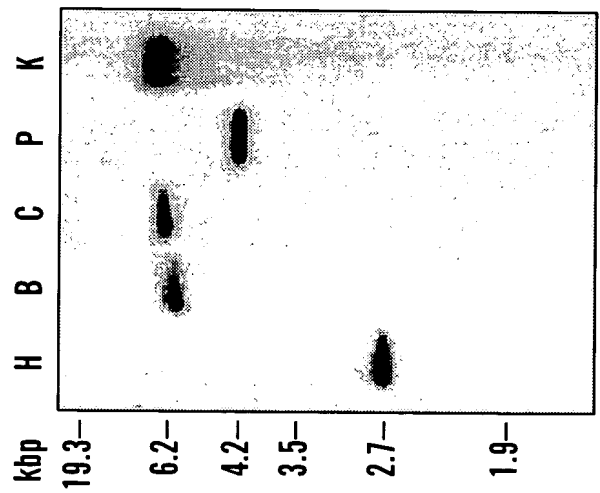


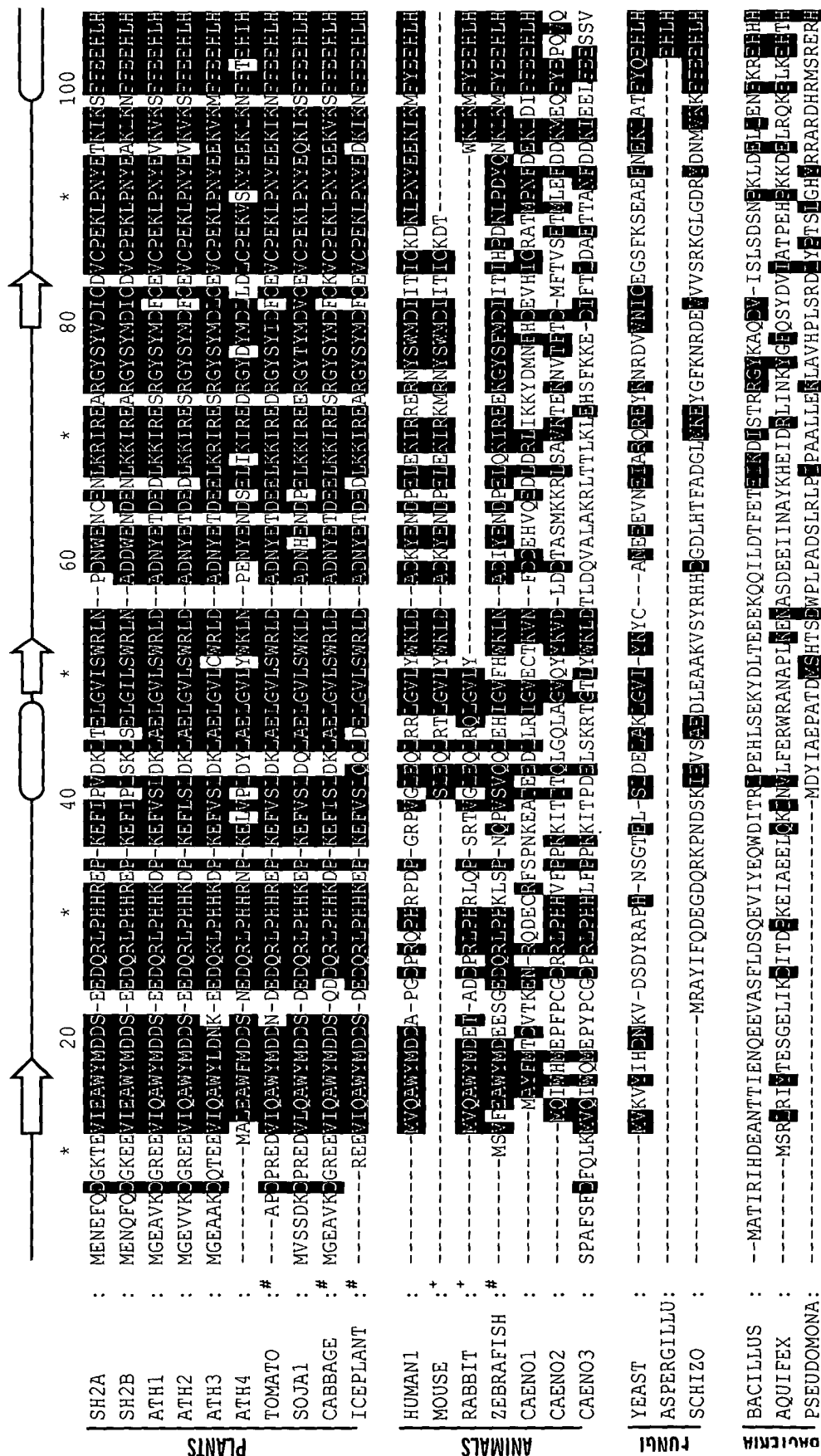
**FIG. 1A**



**FIG. 1B**



**FIG. 1C**



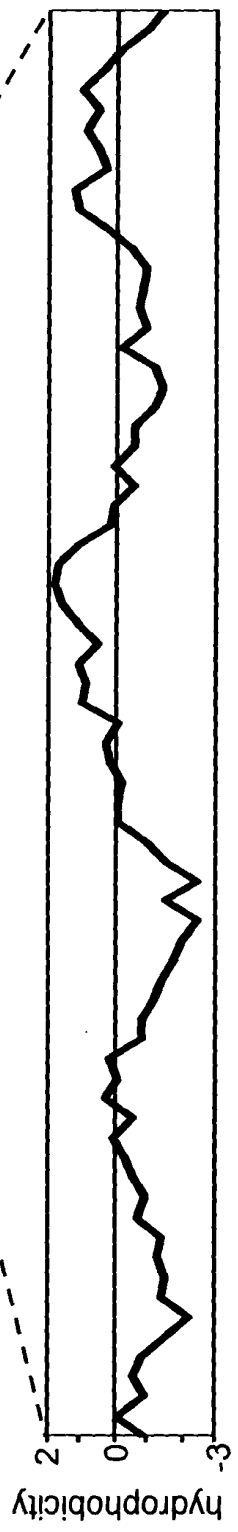
**FIG. 2B**

		*	120	*	140	*	160	*	180	*	200	*	
SH2A	:	TDE	EIRYCLESGYFVDRQNDQ	--	MIRIAKGGCMIVLPAGIYHREFTLDT	DVYIKAMRFLVGD	PVWTPYNRPHDH	--	LPARKKEFLAMLKSEGENQAVEGF*	:	199	:	
SH2B	:	TDE	EIRYCLESGYFVDRQNDQ	--	MIRVAVKGGCMIVLPAGIYHREFTLDS	DVYIKAMRFLVGD	PVWTPYNRPHDH	--	LPARKKEVWEKINRGGT-QAVEA*-	:	197	:	
ATH1	:	TDE	EIRYCVAGTGYFVDRORNEA	--	MIRVIMKGGCMIVLPAGIYHREFTVDS	DVYIKAMRFLVGD	PVWTPYNRPHDH	--	LPARYNVLGFPLLVLLCKQWDI*-	:	198	:	
ATH2	:	TDE	EIRYCVAGSGYFVDRORNEA	--	MIRVIMKGGCMIVLPAGIYHREFTVDS	DVYIKAMRFLVGD	PVWTPYNRPHDH	--	LPARKKEVIDNEFKVNEGVIDASA*	:	199	:	
ATH3	:	TDE	EIRYCLAGSGYFVDRDLNDI	--	MIRVIMKGGCLIVFPAGIYHREFTVDS	DVYIKAMRFLVGD	PVWTPYNRPHDH	--	LPARKAMKKLKVIGDRNIDASA*	:	199	:	
ATH4	:	KDE	EIRYCLAGSGYFVDRQNDR	--	MIRVIMQFGLIVLPAGIYHREFTLDS	SNVIMRFLVGD	PVWTPYNRPHDH	--	HEVRQAVIHGIIYKFGETVKA*---	:	186	:	
TOMATO	:	#	TDE	EIRVAMAGSGYFVDRVRES	--	MIRVIMKGGCMIVLPAGIYHREFTLDS	SNVIMKAMRFLVGD	PIWTPYNRPHDH	--	LPARQEWETFTVNADAGRAVNAA*	:	195	:
SOJA1	:	TDE	EIRFCAGSGYFVDRDRNEA	--	MIRVIMKGGCMIVLPAGIYHREFTLDS	SNVIMRFLVGD	PVWTPYNRPHDH	--	LPARQVAVKDFVEKDVSSHAVDATA	:	200	:	
CABBAGE	:	#	TDE	EIRYCVAGSGYFVDR	--	MIRVIMKGGCMIVLPAGIYHREFTLDS	SNVIMRFLVGD	PVWTPYNRPHDH	--	LPARQVAVKDFVEKDVSSHAVDATA	:	118	:
ICEPLANT	:	#	TDE	EIRYCVRSWQAL	--	MIRVIMKGGCMIVLPAGIYHREFTLDS	SNVIMRFLVGD	PVWTPYNRPHDH	--	LPARQVAVKDFVEKDVSSHAVDATA	:	108	:
HUMAN1	:	LJD	EIRIILDSGYFVDRDRBEQ	--	MIRIFVERGDMVTLIPAGIYHREFTVDEK	YVIMKAMRFLVGD	PVWTPYNRPHDH	--	FEERQGVKFLAQTA*	:	179	:	
MOUSE	:	*	---	---	MIRISVERGDMVTLIPAGIYHREFTLDEK	YVIMKAMRFLVGD	PVWTPYNRPHDH	--	FEERQGVKFLAQTA*	:	132	:	
RABBIT	:	*	LJD	EIRIILDSGYFVDRDRBEK	--	MIRIAVERGDMVTLIPAGIYHREFTLDEK	YVIMKAMRFLVGD	PVWTPYNRPHDH	--	FEERQGVKFLAQTA*	:	137	:
ZEBRAFISH	:	#	LJD	EIRVILDSGYFVDRDEGL	--	MIRIAPVERGDMVTLIPAGIYHREFTLDEK	YVIMKAMRFLVGD	PVWTPYNRPHDH	--	FEERQGVKFLAQTA*	:	116	:
CAENO1	:	DJA	EIRVIKHGSGYFVDRVKEA	--	MIRIAPVERGDMVTLIPAGIYHREFTLDEK	YVIMKAMRFLVGD	PVWTPYNRPHDH	--	FEERQGVKFLAQTA*	:	178	:	
CAENO2	:	KED	VISLVWEGTCYDVEPEDUS	--	MIRVQVANGOLIVPKGS	SERFTTTPQVFNKIQ	FFSRKVEGNQ	--	FEERQGVKFLAQTA*	:	159	:	
CAENO3	:	PFE	QAMIEGTAAYDWEKANCQ	--	MVRIFCEYCOLLILIPANTCFRFTTTPHNEVMR	FFYKDEDS	---	---	FEERQGVKFLAQTA*	:	221	:	
YEAST	:	EDE	EIRYCLEGAGYFVDRDASTPEN	MIRCLAESGCLLILIPPGIYHREFTL	SNVIMKATRLIKDES	KAQINRSNOADS	--	FEERQGVKFLAQTA*	:	179	:		
ASPERGILLU:#	:	EDE	EIRIIRDEGEGYFVDRGDEB	--	MVRIRIVRDLILIPAGIYHREFTLDEK	YVIMKAMRFLVGD	PVWTPYNRPHDH	--	FEERQGVKFLAQTA*	:	99	:	
SCHIZO	:	EDE	EIRIILDSGYFVDRSVDR	--	MVRIFVERGDMVTLIPPGIYHREFTT	DVYIMHMRFLVGD	PVWTPYNRPHDH	--	FEERQGVKFLAQTA*	:	178	:	
BACILLUS	:	TDD	EVRRIIVSEHGIFVYQGCCT	--	FFDVRINECOLLISVPEINRHYFTL	QEDRQVAVRIFV	TTTTCGAVIYEKDSVYQ*	--	FEERQGVKFLAQTA*	:	178	:	
AQUIFEX	:	SDF	EVRVAFVYEDGVVYHPNKKV	--	YILHCTAGCLLISVPEINRHYFTL	QEDRQVAVRIFV	TTTTCGAVIYEKDSVYQ*	--	FEERQGVKFLAQTA*	:	181	:	
PSEUDOMONA:	:	DEHL	ITCSEGCGLLRVR-EGEA	--	MREYRUGSGLLILIPPGIYHREFTT	DVYIMHMRFLVGD	PVWTPYNRPHDH	--	FEERQGVKFLAQTA*	:	164	:	

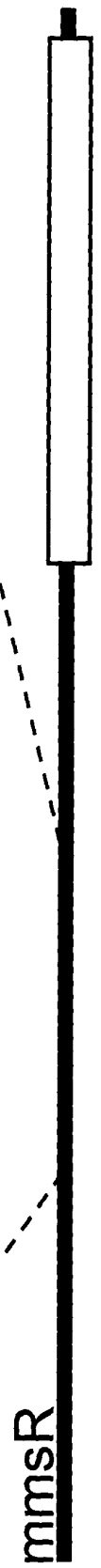
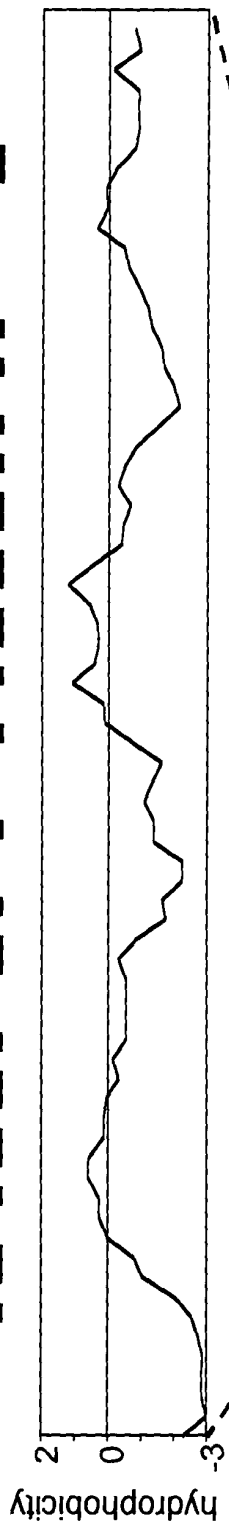
FIG. 3

	SH2A	SH2B	ATH1	ATH2	ATH3	ATH4	HUMAN	CAENO1	CAENO2	CAENO3	SCHIZO	SCEREV	BACSUB	AQUIFEX	PSEUDO
<i>Oryza sativa</i> SH2A		84 (93)	70 (85)	71 (87)	67 (83)	59 (74)	50 (67)	30 (49)	20 (35)	23 (46)	33 (46)	32 (51)	17 (33)	14 (29)	14 (24)
<i>Oryza sativa</i> SH2B		84 (93)	75 (87)	75 (88)	70 (84)	60 (75)	54 (69)	31 (49)	20 (35)	24 (47)	31 (44)	33 (50)	18 (33)	14 (29)	14 (24)
<i>Arabidopsis thaliana</i> 1		70 (85)	75 (87)	92 (95)	80 (88)	57 (73)	56 (69)	32 (52)	20 (36)	26 (47)	33 (45)	35 (51)	18 (34)	14 (30)	14 (26)
<i>Arabidopsis thaliana</i> 2		71 (87)	75 (88)	92 (95)	82 (89)	58 (75)	54 (68)	31 (50)	18 (34)	24 (45)	33 (46)	34 (50)	18 (33)	14 (30)	13 (25)
<i>Arabidopsis thaliana</i> 3		67 (83)	70 (84)	80 (88)	82 (89)	57 (73)	54 (69)	30 (50)	18 (34)	23 (45)	23 (45)	33 (48)	18 (32)	15 (30)	12 (26)
<i>Arabidopsis thaliana</i> 4		59 (74)	60 (75)	57 (73)	58 (75)	57 (73)	54 (70)	34 (53)	23 (46)	24 (41)	27 (41)	39 (56)	19 (32)	18 (30)	12 (24)
<i>Homo sapiens</i>		50 (67)	54 (69)	56 (69)	54 (68)	54 (69)	54 (70)	39 (58)	22 (37)	29 (53)	35 (51)	38 (55)	19 (34)	17 (32)	12 (23)
<i>Caenorhabditis elegans</i> 1		30 (49)	31 (49)	32 (52)	31 (50)	30 (50)	34 (53)	39 (58)	15 (29)	23 (46)	36 (51)	32 (49)	18 (35)	20 (33)	11 (25)
<i>Caenorhabditis elegans</i> 2		20 (35)	20 (35)	20 (36)	18 (34)	18 (34)	23 (46)	22 (37)	15 (29)	33 (48)	15 (29)	15 (31)	10 (23)	9 (20)	5 (12)
<i>Caenorhabditis elegans</i> 3		23 (46)	24 (47)	26 (47)	24 (45)	23 (45)	24 (41)	29 (53)	23 (46)	33 (48)	22 (42)	21 (45)	14 (35)	12 (25)	8 (22)
<i>Schizosaccharomyces pombe</i>		33 (46)	31 (44)	33 (45)	33 (46)	33 (48)	27 (41)	35 (51)	15 (29)	22 (42)		37 (58)	18 (36)	20 (34)	14 (26)
<i>Saccharomyces cerevisiae</i>		32 (51)	33 (50)	35 (51)	34 (50)	34 (50)	39 (56)	38 (55)	15 (31)	21 (45)	37 (58)		16 (33)	17 (30)	15 (24)
<i>Bacillus subtilis</i>		17 (33)	18 (33)	18 (34)	18 (33)	18 (32)	19 (34)	18 (35)	10 (23)	14 (35)	18 (36)	16 (33)		26 (46)	6 (19)
<i>Aquifex aeolicus</i>		14 (29)	14 (29)	14 (30)	14 (30)	15 (30)	18 (30)	20 (33)	9 (20)	12 (25)	20 (34)	17 (30)	26 (46)		7 (19)
<i>Pseudomonas aeruginosa</i>		14 (24)	14 (24)	14 (26)	13 (25)	12 (26)	12 (23)	11 (25)	5 (12)	8 (22)	14 (26)	15 (24)	6 (19)	7 (19)	
	SH2A	SH2B	ATH1	ATH2	ATH3	ATH4	HUMAN	CAENO1	CAENO2	CAENO3	SCHIZO	SCEREV	BACSUB	AQUIFEX	PSEUDO

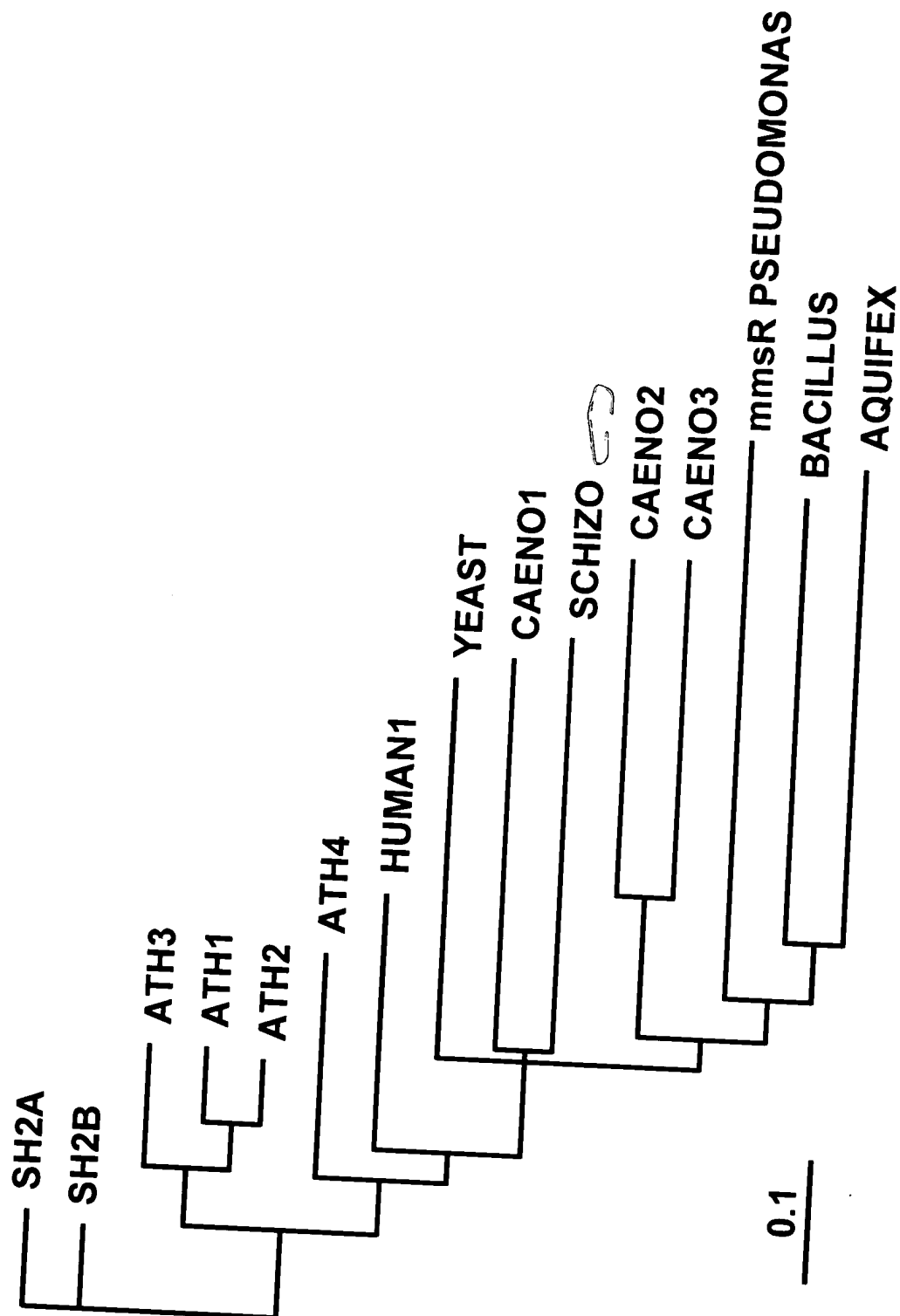
**FIG. 4**



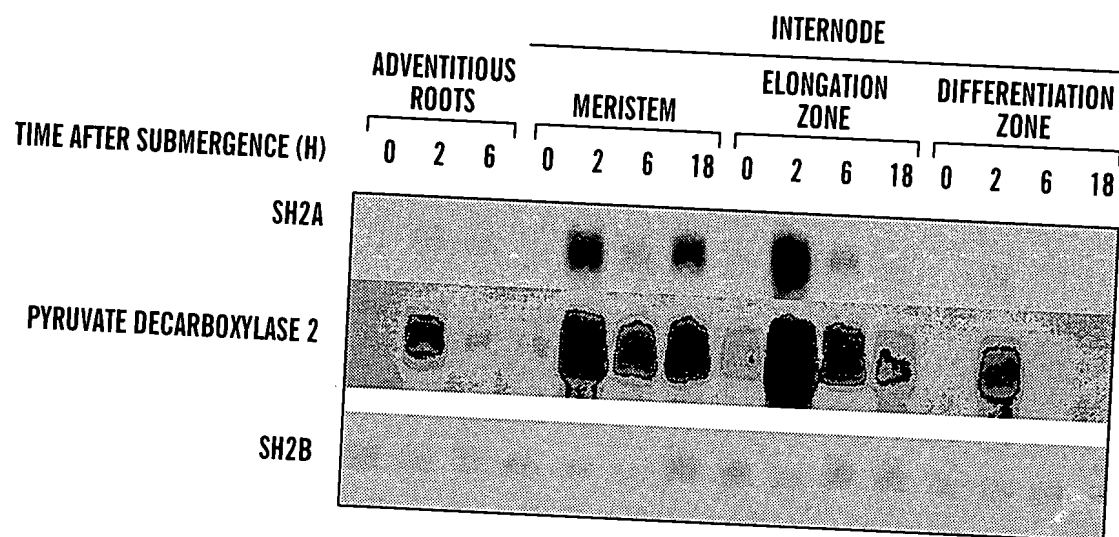
95 FFEHHHTDE-ETRYCLEGSGYFDVRDQNDQWIRIALKKGGMIVLPAGMYHRTLTDTNLIKAMRLFVGDPVWT. 167  
 60 RMSRERH-DEHLLIYCSEGQGLLRVR-EGEAWREYRVGSGDLLWLPFGMAHDYAAD-DRQPWT--IFWTHLRGD' 131



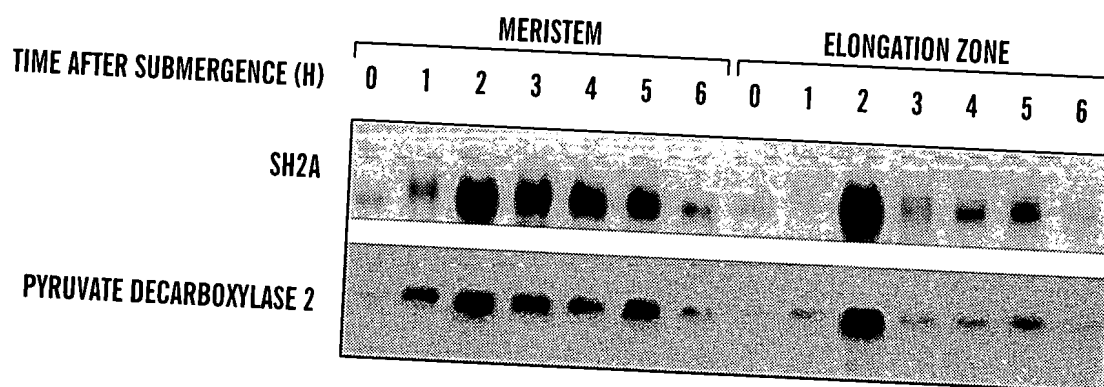
nonconserved region  
 conserved domain  
 DNA-binding

**FIG. 5**

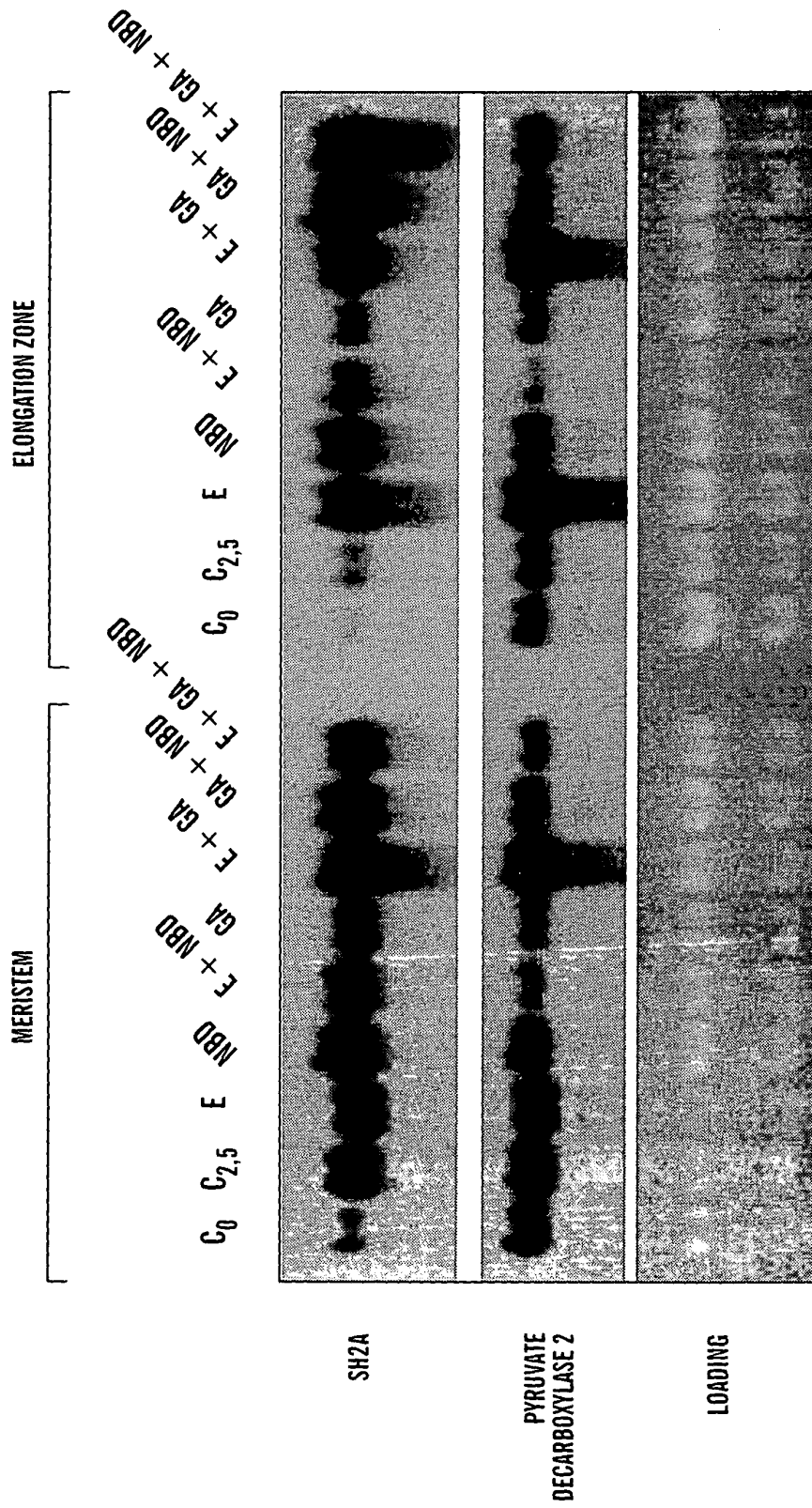
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**FIG. 6A**

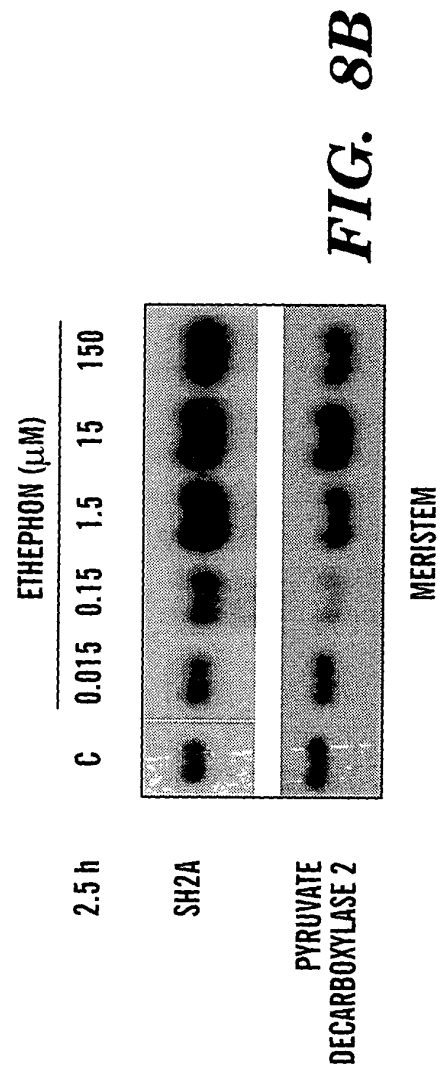
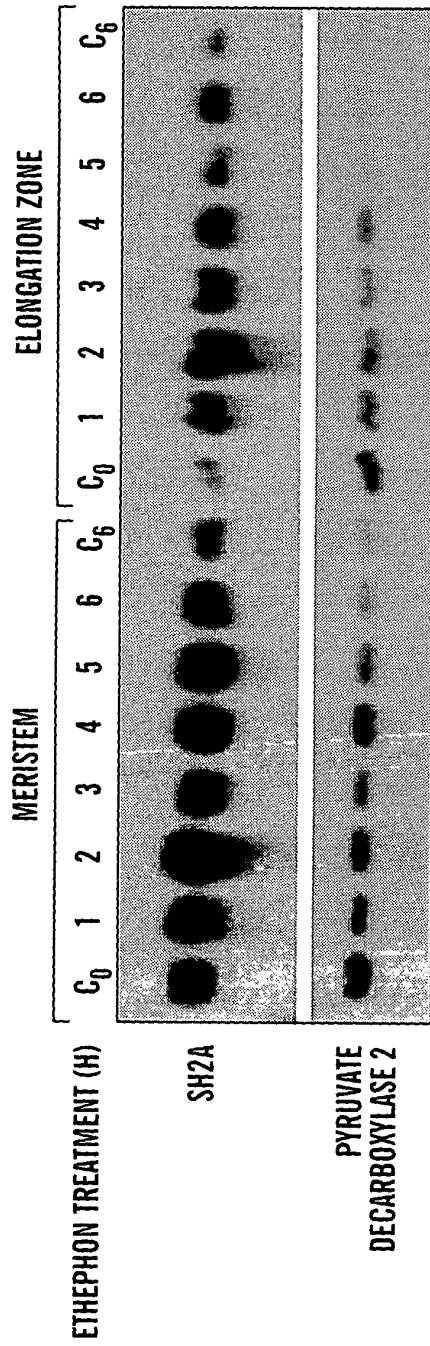


**FIG. 6B**

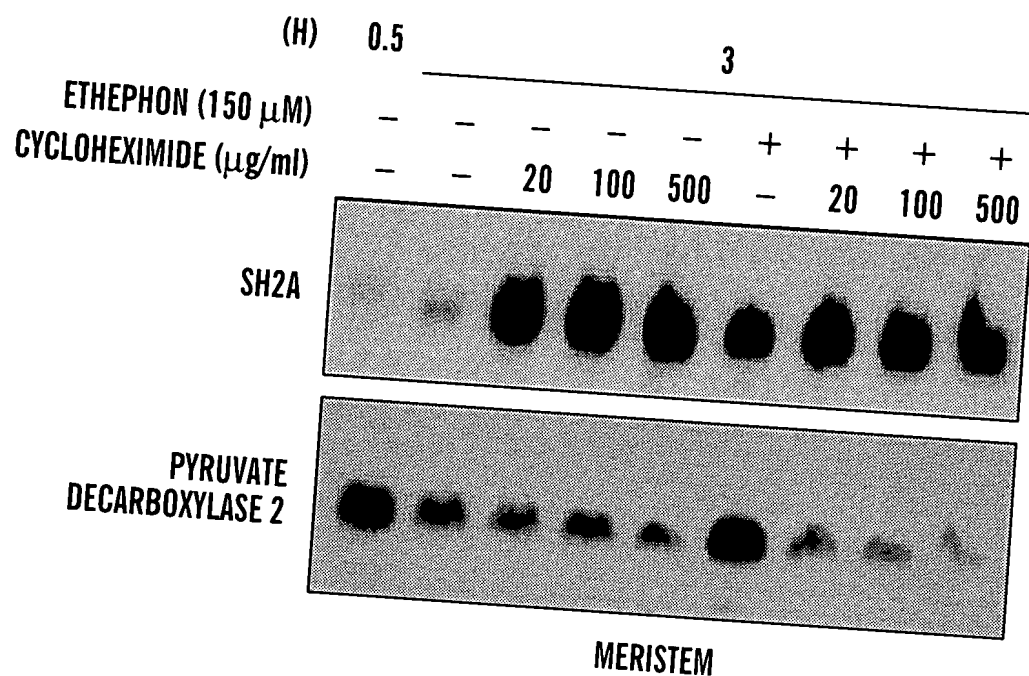


**FIG. 7**

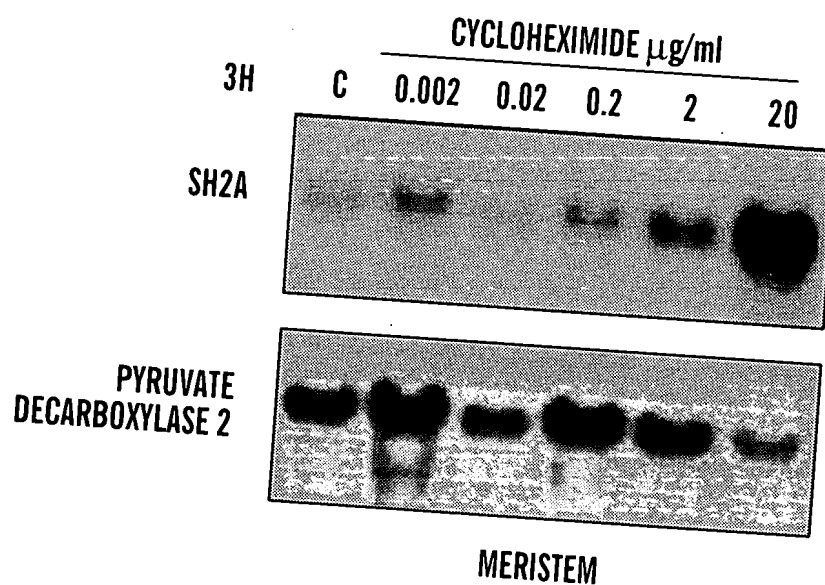




22

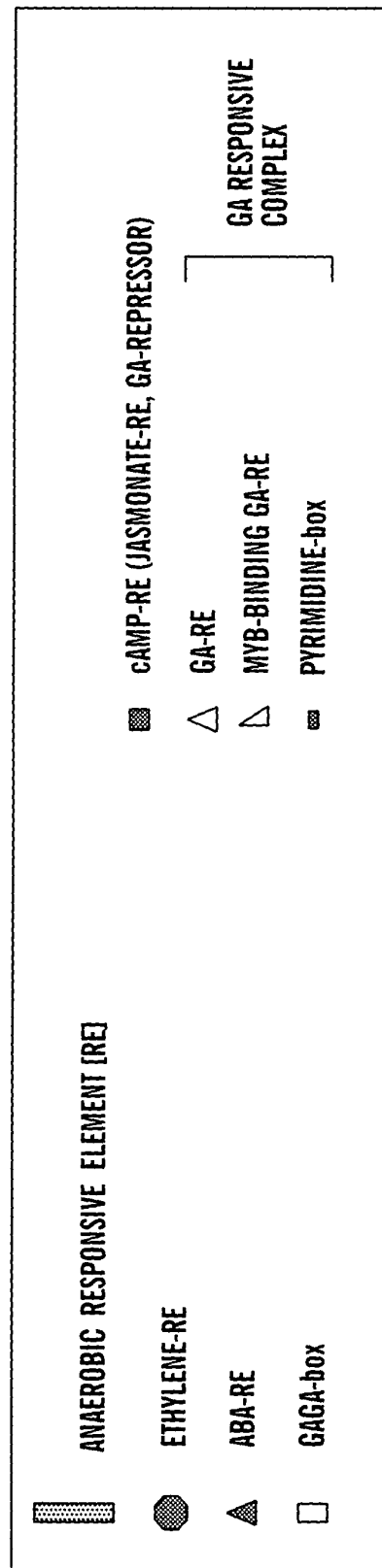
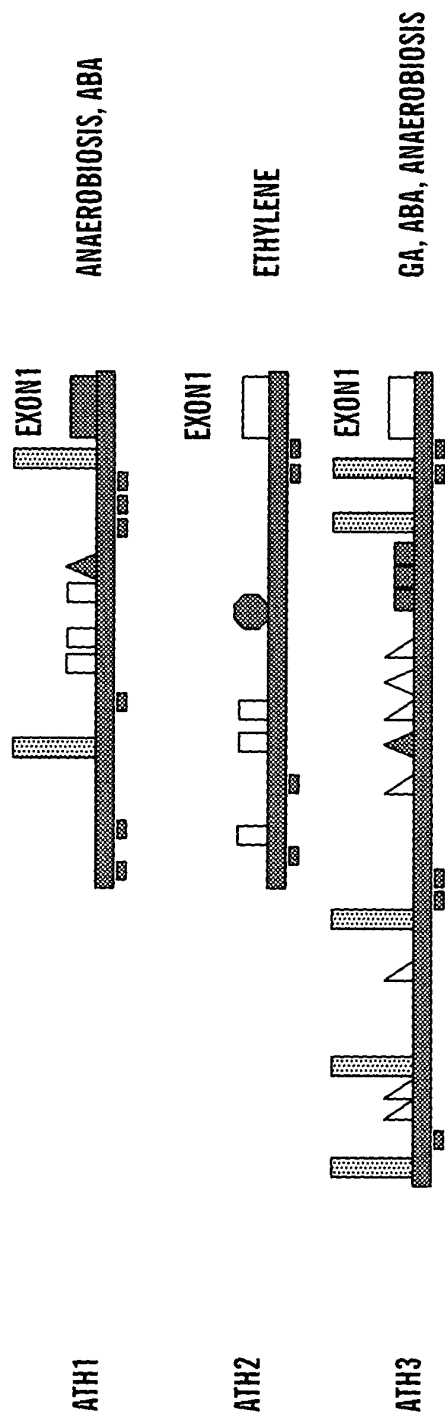


**FIG. 9A**



**FIG. 9B**

PUTATIVE REGULATORY SIGNALS



**FIG. 10**